

MAY (C. H.)

The Early Eye-Symptoms
In Chronic Alcoholism.

BY

CHARLES H. MAY, M.D.,
NEW YORK.

REPRINTED FROM

The Am. Journal of Inebriety
for April, 1891

AND

The Northwestern Med'l and Surg. Journal
for March, 1892.





Reprinted from the *American Journal of Inebriety* for April, 1891, and the *Northwestern Medical and Surgical Journal* for March, 1892.

THE EARLY EYE SYMPTOMS IN CHRONIC ALCOHOLISM.

BY CHARLES H. MAY, M.D.,

Chief of Clinic, Eye Department, Vanderbilt Clinic ; Instructor in Ophthalmology, College of Physicians and Surgeons, New York ; Assistant Surgeon, New York Ophthalmic and Aural Institute, etc.

As is well known, the organ of vision, like so many other parts of the body, suffers insidiously from excessive use and long-continued over-indulgence in alcoholic beverages ; it is the purpose of this paper to point out the early symptoms referable to the eye, which occur at a stage of chronic alcoholism when the amblyopia alcoholica has not yet become very marked. Such observations can best be made in the cases of private patients and among the better class of dispensary patients, since the lower classes are very apt to neglect seeking medical aid until vision has become very much impaired.

The eye symptoms produced are quite constant and are sufficiently well marked to be observed in quite an early stage of the condition which we call chronic alcoholism—a condition which may be defined as one in which the quantity of alcohol habitually and repeatedly taken exceeds that which can be assimilated, and which results in producing toxic effects of greater or lesser intensity, after a longer or shorter period.

It is commonly stated and usually accepted that the maximum daily quantity of alcohol which, if properly diluted,



can be indulged in every day without causing evil effects eventually is an ounce and a half. This would represent about three ounces of whiskey, about nine ounces of sherry, about a pint of light wine (claret, rhine wine, etc.), and about two or three pints of beer. But as is the case in the effects upon other parts of the body, much larger quantities are taken regularly by persons who never complain of symptoms referable to the eye, and who would not present any such symptoms if functionally examined; and, in like manner, the time during which alcoholic excesses can be indulged in before eye symptoms show themselves also varies. The frequent indulgence in small non-intoxicating doses seems to favor the occurrence of amblyopia alcoholica much more decidedly than does the drinking of large, intoxicating quantities at longer intervals. Whiskey certainly causes the majority of cases in this country. In the great majority of cases the condition occurs in the male sex; this is, as we would most naturally expect, considering the much greater frequency with which men acquire the alcohol habit than do women. Almost always both eyes are affected, though the symptoms may present variations in degree of severity in the two eyes.

The symptoms are :

- Conjunctivitis.
- Injection of the ocular conjunctiva.
- Congestion of the iris.
- Spasm of accommodation.
- Contraction of the pupil.
- Photophobia.
- Nyctalopia.
- Glimmering sensation in bright light.
- Scotomata (color and white).
- Amblyopia.
- Partial (temporal) atrophy of the optic nerve. }

The *conjunctivitis* is of the catarrhal variety, and is of very common occurrence in chronic alcoholism. It is peculiar in its "irritative" nature. Its severity is subject to changes from day to day, according to the quantity of alcohol indulged in. The *injection* of the ocular conjunctiva is not merely a part of the conjunctivitis; it may exist independently of the latter, presenting a marked appearance and sometimes accompanied by *congestion of the iris*; there will then be found a well-marked ring of circumcorneal redness—the condition indicating an implication of the ciliary region in the vascular disturbance. As is the case with the conjunctivitis, these two symptoms depend largely upon the immediate effects of the quantity of alcoholic drink taken, so that they are especially marked after a debauch.

Spasm of accommodation is not infrequent in alcoholic subjects, and becomes noticeable especially because male adults are rarely otherwise subject to it. The amount of spasm seems largely to depend upon the quantity of drink on the same or the previous day; it may interfere materially with a functional examination of the eye in testing for errors of refraction, and may therefore necessitate the use of atropine or of homatropine before the accommodation becomes relaxed.

The *pupils* are apt to be *smaller* than usual in chronic alcoholism; during intoxication or after a debauch the dilated pupils of acute alcoholic poisoning are observed.

Photophobia and *nyctalopia* exist not infrequently; and a *glimmering* sensation, especially in bright light, is also sometimes complained of. The photophobia may depend upon the conjunctivitis, to which, in some cases, the congestion of the iris and injection of the ocular conjunctiva are additional factors. The principal cause, however, is probably

hyperæsthesia of the retina—a condition which is held responsible for the *nyctalopia*. The latter symptom may be defined to be the ability to see better by dim light than by bright illumination—a condition resembling what has been described as *retinitis nyctalopica*. While these patients may occasionally really have an increase in the acuteness of vision when the illumination is less intense, as a rule there is no increase, but rather a slight diminution in the acuteness of vision with a less bright light ; so that the improvement is merely apparent, and not real. But these patients feel very much more comfortable in a subdued light, and hence imagine they see better. The influence of diminished illumination is quite often marked, and many such patients acquire the habit of wearing smoked glasses, often resorting to these without the advice of any oculist, because the eye feels more comfortable with them.

Quite early the existence of *central scotomata* can be demonstrated ; that is, a small part of the centre of the field of vision will be defective in its appreciation of color or even of white. This symptom usually exists quite early, but it may require careful testing in order to be found. The portion of the field which will be defective is almost always a small oval, with its long axis placed horizontally, extending from the point of fixation to the blind spot and partially or entirely including the latter. At first these scotomata exist only for green and red ; later there may be a scotoma for purple and then also for white ; that is, there will be no sight at all over this small oval area. These scotomata whether for colors or white are almost always negative or relative—not apparent to patient ; they may, however, be absolute, and thus appear as constant spots before the eyes, just as in certain diseases of the retina. They are, however, al-

most always central. The patient may be conscious of color defect, but usually the color perception is good excepting this central scotoma. If in this early stage he is tested for color blindness, as by Holmgren's colored skeins, he will not be found defective, and will match colors well. A number of such cases have, however, complained to me that everything appeared less bright to them than it had formerly, though they could distinguish colors quite readily.

Even though these central scotomata for colors or white are found, there may be no *diminution in the acuteness of vision*; but commonly some amblyopia becomes manifest when the symptoms already mentioned are found. This reduction in the acuteness of vision, again, is almost always central, so that the circumference of the field of vision is not usually affected, and peripheral vision remains good. The amblyopia does not, as a rule, advance rapidly; very often in the early stages $\frac{20}{40}$ or $\frac{20}{30}$ will represent the patient's sight. Even in advanced stages total blindness from amblyopia alcoholica is uncommon, though this is probably because the patient has sought medical advice before such an extreme result has occurred, and has reduced or stopped his alcoholic excesses. There is no constant relation between the amount of amblyopia and that of color scotoma. It is quite interesting to observe how quickly the amblyopia will respond to changes in the habit of the patient, and how, after a few weeks of abstinence from alcohol, the vision can be brought up to, say, $\frac{20}{40}$ to $\frac{20}{30}$; and how quickly also there is a response in the opposite direction when the alcoholic excesses are resumed.

In most cases of amblyopia alcoholica (60 to 70 per cent) the ophthalmoscope reveals a well-marked picture. In the very early stages no abnormalities of the fundus may be

seen, or, perhaps, only a little hyperæmia of the disk, or a slight swelling at its margins, with, perhaps the appearance of white striæ along the blood vessels, especially near the margins of the disk. But even before an advanced period there is apt to be a well-marked and characteristic picture—a pallor of the temporal portion of the disk, due to partial atrophy—to a wasting of the fibres constituting this segment. This pallor must not be confounded with a certain amount which is physiological, and is found in a certain percentage of normal eyes examined with the ophthalmoscope; there may, therefore, be cases in which it will be difficult to draw the line between the physiological pallor and the appearance of the pathological atrophy. But usually no such difficulty will be met with, and the ophthalmoscopic picture will be a characteristic one.

For a long time nothing was known concerning the pathological anatomy of this condition; this was first explained by Samelsohn and by Vossius in 1882, confirmed by Nettleship and by Burge in 1884, and by Edwards and Uhthoff in 1886. All these investigators found an interstitial neuritis—proliferation of connective tissue and secondary degenerative descending atrophy of those fibres of the optic nerve which pass from the temporal side of the disk to supply the macula lutea. The atrophy affects chiefly the nerve fibres of the fasciculus cruciatus; these spread from the temporal part of the disk to the region of the macula lutea, hence the occurrence of central scotoma and the form of the latter (oval horizontally).

HOFFMAN ARMS, Madison Avenue and Fifty-ninth Street,
N. Y.

